ENFORCER

H.264 Network DVR

User's Manual

Version 1.8

	No. of channels	Pictures per Second
DR-104Q	4	120
DR-108Q	8	240
DR-116Q	16	240

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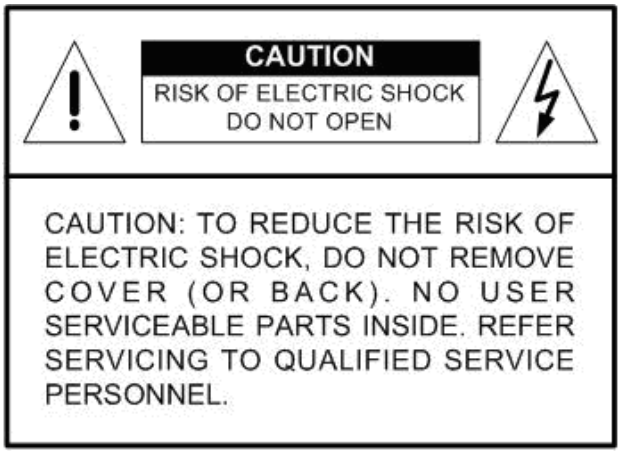
Caution and Preventive Tips

- Handle with care, do not drop the unit
- Mount the unit in an equipment rack or place it on a solid, stable surface
- Indoor use only. Do not place the unit in a humid, dusty, oily, or smoky site
- Do not place it in an area with poor ventilation or in an area close to fire or other sources of heat. Doing so may damage the unit as well as cause fire or an electric shock
- When cleaning is necessary, shut down the system and unplug the unit from the outlet before uncovering the top cover. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning
- Always shut down the system prior connecting or disconnecting accessories, with the exception of USB devices


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol intends to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol intends to alert the user to the presence of unprotected "Dangerous Voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact your dealer for assistance.

Rack Mounting

Consult with the supplier or manufacturer of your equipment rack for the proper hardware and procedure of mounting this product in a safe fashion. Avoid uneven loading or mechanical instability when rack-mounting units. Make sure that units are installed to get enough airflow for safe operation. The maximum temperature for rack-mounted units is 40 °C. Check product label for power supply requirements to assure that no overloading of supply circuits or over current protection occurs. Mains grounding must be reliable and uncompromised by any connections.

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1. Overview

Lite H.264 DVR is an integrated digital video recorder that combines the features of a time-lapse audio / video recorder, a multiplexer, and a video server to create a single security solution.

Its outstanding triplex operation enables users to view live video, search and playback any recorded video by date/time or event, and remotely monitor the unit via internet on PC, MEANWHILE the recording of the DVR unit is ongoing simultaneously.

Lite H.264 DVR is enhanced to provide H.264 compression mode. Moreover, a marvelous implementation is the brand-new experience of Graphical User Interface (GUI) that optimizes the monitoring controls of the unit.

Lite H.264 DVR is pre-installed with remote viewing and configuration software, which is a Web-browser plug-in allowing users to view live or recorded video images, and enables remote configuration. The remote software is stored in Lite H.264 DVR and deployed over a LAN, WAN or Internet connection to remote Windows-based computers. This simplifies the installation and maintenance of the software components so all remote users are using the same software coming from the unit.

2. System Setup

The notices and introduction on system installation will be described particularly in this chapter. Please follow the description to operate the unit.

In order to prevent the unit from data loss and system damage that caused by a sudden power fluctuation, use of an Uninterruptible Power Supply (UPS) is highly recommended

2.1 Position the DVR

First, note to position / mount the DVR in a proper place and be sure to power off the unit before making any connections. The placed location should avoid hindering or blocking the unit from airflow. Enough airflow is needed to protect the unit from overheating. The maximum allowable temperature of operating environment is 40°C.

The unit utilizes heat-conducting techniques to transfer internal heat to the case, especially to the bottom side of the unit.

NOTE: Be sure the rubber feet are not removed, and always leave a space for air ventilation on the unit's bottom side.

2.2 Select Video Format

The DVR is designed to operate under either NTSC or PAL video formats. The switch is on the rear panel.

2.3 Connect Devices to the DVR

This section lists some important notices that should be read before making any connection to the DVR.

Connecting Required Devices

Before power up the unit, cameras and a monitor should be connected to the unit for basic operation. If needed, connect a call monitor for displaying full screen video of all installed cameras in sequence.

Connecting Short-term Device

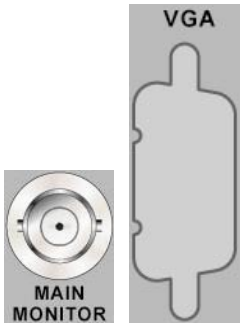
If any short-term devices shall be installed to the DVR as parts of the unit system, such as USB ThumbDrive® or any USB devices, etc, make sure those devices are connected only after the unit is powered up. The reason is because the DVR can recognize the external devices only after the power-up process is done completely.

2.4 Rear Panel Connections

There are various connectors on the rear panel for the DVR installations. The following shows the detailed description of each connector.

Main Monitor (BNC/ VGA)

BNC and VGA output connectors are offered for connecting to a main monitor. The main monitor displays live image and playback recorded video in either full-screen or split-window format. VGA output connector is optional.

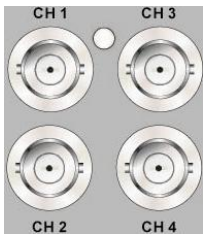


Call Monitor (8CH and 16CH models only)

The call monitor is used to display full screen video of all installed cameras in sequence. The BNC call monitor connector allows users to connect the DVR with an optional call monitor.

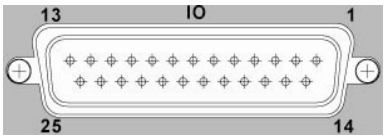
Video In

A group of BNC connectors is offered for video input streams from installed cameras. The number of connectors is equal to the number of channels.



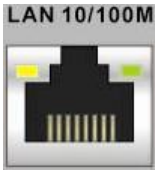
Alarm I/O & RS485

A D-Sub connector is provided to offer users the flexibility to connect the DVR to Alarm I/O and RS-485 devices. Refer to ***Setup Guide*** for detailed pin definitions.



LAN Connector (RJ-45)

The DVR is capable of networking. Once the unit is connected to the LAN network, users can remotely access the unit through the remote software on a PC.



USB Connector (x1)

There is one USB port provided to allow users to connect a PS/2 mouse via a USB converter.

Power Jack

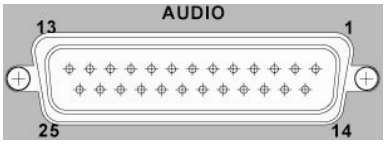
The DVR has a free voltage DC power connection jack. Please connect the power adapter shipped with the unit.

Audio In

Audio In connectors are offered for connecting audio source devices to the unit. 4CH models offer RCA connectors while 8CH and 16CH models offer a D-Sub connector.

4CH models

8CH & 16CH models



Audio Out – Main & Call

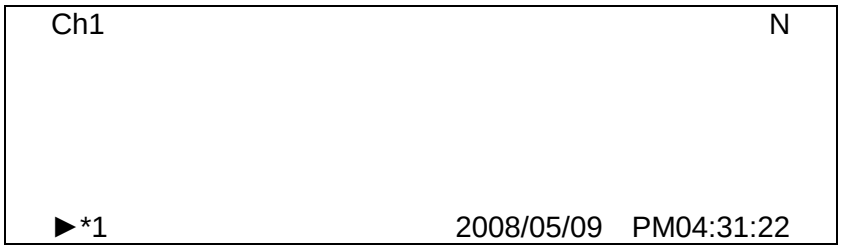
Main & Call Audio Out RCA connectors are provided for connecting the DVR to audio output devices (e.g. amplified speakers). "Main" will output audio from the main monitor, whereas "Call" will output audio form the call monitor.

NOTE: Call Audio Out RCA connector is only available for 8CH and 16CH models.

3. General System Setup

Before operating the DVR, some general configuration should be setup first. The following subsections will introduce function keys on the front panel and general configuration of the DVR.

The regular displayed OSD information and its displayed positions are shown as following figure. Title of the channel will be displayed on the top-left corner of the window, either in full screen mode or in multiple channel mode. The current operating mode, including Call mode, Dome Control mode, Playback mode, Freeze mode and Sequence mode, will be displayed on the bottom-left corner of the screen. The date/ time information will be display on the bottom-right corner of the screen. On the upper-right corner will show the authority level of login account. Under logout condition, the icon will show "N".



3.1 Front Panel Introduction

The front panel controls enable users to control the unit and preset the programmable functions.

3.1.1 LED Definition

The LEDs on the front panel of the DVR are described as follow.

Power LED
The LED lights up when the correct power is connected to the unit.

REC LED
The LED blinks while the DVR is recording.

Alarm LED
The LED lights up when an alarm is triggered.

Network LED
The LED lights up when the DVR is connected to a network and blinks when the data is being transferred.

3.1.2 Function Keys

This section describes the functional keys on the front panel of the DVR. Refer to the ***Setup Guide*** for the graphical illustration of functional keys.

CHANNEL

- In both Live and Playback modes, press the CHANNEL key to view the corresponding video in full screen. The number of the CHANNEL keys corresponds to the number of cameras supported by the unit.
- In Dome Control mode, the key "1" is used to access the Set/Go preset menu; the key "2" is used to hide or display the hint screen.
- In OSD virtual keyboard, press keys 1~9 to input number 1~9, and press key 10 to input number 0.

DOME

- Press the key to enter dome control mode. Please refer to Section **Dome Control** for detailed controlling operation.
- In OSD virtual keyboard, press this key to go backspace.

MODE

Press repeatedly to select for wanted monitor display format. The available view modes includes: full-screen, 4-window (2×2), 9-window (3×3) and 16-window (4×4). Refer to Section **Viewing Modes** for detailed information.

SEQ (Sequence)

Press to start automatic sequence display of video from all installed cameras.

MENU

Press this key to enter the OSD setup menu.

COPY

In Playback mode, press COPY to select the start and end time of the export video. Refer to Section **Video Export** for detailed information.

CALL (8CH and 16CH models only)

- In Live mode, press this button to enter call monitor control mode.
- In Dome Control mode, press CALL in association with ENTER to enter the OSD setup menu of the dome camera.

- In OSD virtual keyboard, press this key to input a period mark “.”.

PLAY/STOP

Press this key to switch between live image and playback video.

NOTE: According to record setting, part of the latest video cannot be played back because the video is still saved in the buffer.

FREEZE

- Press FREEZE while viewing live image, the live video will be frozen. The date / time information shown on the monitor will continue updating. Press FREEZE again to return to live mode.
- Press FREEZE while playing the recorded video, the playback video will be paused. Press LEFT / RIGHT to move the recorded video reverse / forward by single step. Press FREEZE again to continue playing video.

SEARCH

- In both Playback and Live mode, press SEARCH to enter the Search menu to search and playback recorded video by date/time or events.
- Press twice to instantly playback the latest recorded videos.

ESC

- Press to cancel or exit from certain mode or OSD setup menu without changing the settings made previously.
- If password protection is enabled, press ESC for five seconds to lock up functions of certain keys, including **PLAY**, **MENU**, **SEARCH**, **DOME** and **CALL**. Once users lock up the functions of these keys, enter proper username and password to unlock.

NOTE: Please go to the <System Setup> → <User Management> menu to enable or disable the password protection.

Direction Keys

- In Zoom mode, press these keys to move to desired directions.
- In the OSD setup menu, the LEFT/ RIGHT keys are used to move the cursor to previous or next fields. To change the value in the selected field, press UP/ DOWN keys.

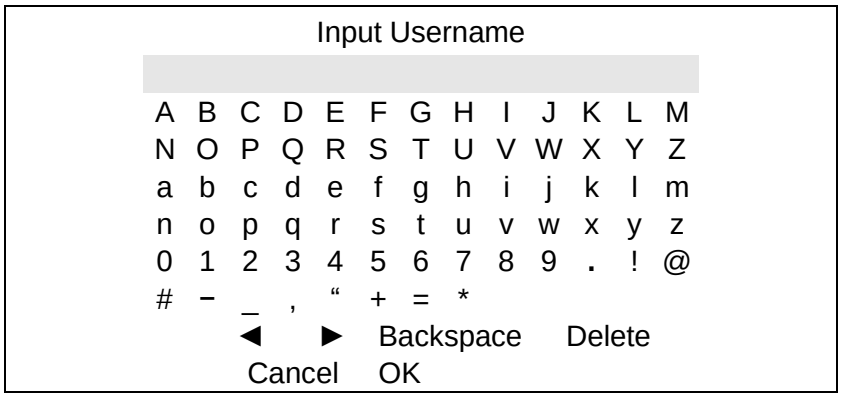
ENTER / ZOOM

- In OSD setup menu or selection interface, press this key to make the selection or save settings.
- In live full screen view mode, press this key to view a 2× zoom image;

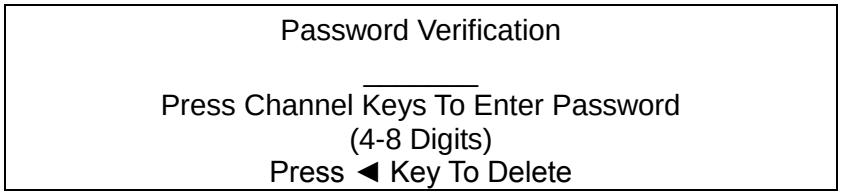
press it again to exit Zoom mode.

3.2 Entering OSD Setup Menu

The configuration of the DVR can be customized by entering the intuitive Graphical User Interface (GUI) OSD setup menu. Collaborating with a USB mouse, setting up the DVR can be easy as operating on a PC. Press MENU and input a valid username. There are two preset accounts: "admin" and "user". "admin" can be inputted via pressing the hot key MENU, while "user" can be inputted via pressing the hot key SEARCH. Move to <OK> and press ENTER to proceed.



The next step is to enter a corresponding password. The preset password for "admin" is "1234", and the password "4321" is for "user".



NOTE: It is strongly suggested to change the preset password to prevent unauthorized access to the unit.

An icon displayed at the upper-right corner of the screen will show the authority level of the account. Under logout condition, the icon will show "N". When an account is logged in, its authority level number (1~8) will be shown.

Before completely logout, other functions can also be accessed without having to login again. There are two ways to logout: manually logout by pressing ESC key at Live mode, or auto logout when keys are not pressed for 5 minutes at Live/ Menu mode.

3.2.1 User Management

The DVR provides the option to create up to seven sets of usernames and passwords with customized authority, excluding the preset "admin" account. From the Main Menu, select <System Setup> → <User Management> and the menu is as the following:

User Management	
Password Protection	ON
Account Setup	
Authority Setup	
Load Default Setting	No

Password Protection

Select <ON> to request for username and password for accessing functions listed in Authority Setup menu, or select <OFF> to allow free access.

Account Setup

Setup customized username, password, and authority level in this menu. The username is case sensitive. The authority level is ranked from level 1~8, and level 8 has highest authority. Alternatively, select <Disable> to suspend the account.

NOTE: The username and authority level of the preset "admin" account cannot be changed.

Authority Setup

Setup the allowed authority level for accessing the functions listed in this menu. The functions include: Playback/Search, Dome Control, Call Control, Export Data, Menu Access, System Setup, Monitor Setup, Camera Setup, Record Setup, Sequence Setup, Event Setup, Database Setup, Configuration and Shutdown. The authority level is ranked from level 1~8, and level 8 has highest authority. Alternatively, select <Disable> to allow free access.

NOTE: The "Menu Access" cannot be set to <Disable>. When the account does not have authority to access certain functions, an error message will be displayed on the screen.

Load Default Setting

Select <Yes> to load the default setting.

3.3 Power Up / Shutdown the DVR

If the DVR must be shutdown for any reason, please use the proper shut down and power up procedures to avoid damaging the DVR.

Power Up the Unit

Simply plug in the power adapter that came with the package and the DVR will start to boot.

The color bar and system checking information will be shown on the monitor and then disappear when the unit has been completely powered up.

Restart / Shutdown the Unit

Press MENU and input the username and password that has sufficient authority to access the OSD setup menu. Select <Shutdown> in Main Menu and press ENTER to enter the Shutdown menu, which displays as follows.

Shutdown	
Power Off	Execute
Reboot	Execute

<Power Off>

Select this item to shut down the unit. Do not remove the power during shut down until the message "You can safely turn off DVR now!" displays.

<Reboot>

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

3.4 System Date / Time Setting

Users can set the current date, time and other OSD parameters in Date/Time menu (under System Setup menu). The login account should have authority to access the System Setup menu. In OSD setup menu, select <System Setup> and press ENTER, then select <Date/Time> to access the Date/Time menu; the menu displays as follows.

Date/Time	
Date	2008/02/21
Time	PM10:39:26
Time Zone	OFF
Date/Time Display	1 Row
Date Display Mode	Y/M/D
Time Display Mode	12 HR
Date/Time Order	Date First
Daylight Saving Time Setup	
Network Time Protocol Setup	

3.4.1 Set Date / Time

Set Date / Time

Select <Date> / <Time> and press ENTER to adjust the settings. LEFT / RIGHT keys are used to move the cursor to previous or next field, ENTER is for selecting, and UP / DOWN are used to change the value in the selected field.

NOTE: The new date / time setting applies to record new video. The date and time of previously recorded video will not be changed.

NOTE: If time settings have to be changed in any case, it is strongly recommended to format the HDDs to avoid database corruption.

Date / Time Display

Users are allowed to set the time OSD displays in 1 or 2 rows. Use the UP / DOWN keys to change the setting.

Date Display Mode

This function allows users to set the OSD display type of the date. There are three options to select from: <Y/M/D>, <M/D/Y> or <D/M/Y>. "Y" represents "Year", "M" represents "Month" and "D" represents "Day".

Move to the item and press ENTER, the option starts blinking. Use UP / DOWN keys to change the setting.

Time Display Mode

Users can set the time format to <12 hour> or <24 hour>. Use the UP / DOWN keys to change the format.

Date / Time Order

The item is used to set the order of date / time display to <Date First> or <Time First>. Use UP / DOWN keys to change the setting.

3.4.2 Daylight Saving Time

Daylight Saving Time

The item is for those people who live in certain regions to observe Daylight Saving Time. Select <ON> to enable, or <OFF> to disable the function.

If the function is disabled, the DST Start / End time and DST Bias will be grayed out and cannot be accessed.

NOTE: If this function is enabled, the date/ time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. "S" indicates summer time and "W" indicates wintertime.

DST Start / End

The items are used to program the daylight saving duration. Use LEFT / RIGHT keys to move the cursor to the next or previous field, UP / DOWN to change the settings in the selected field.

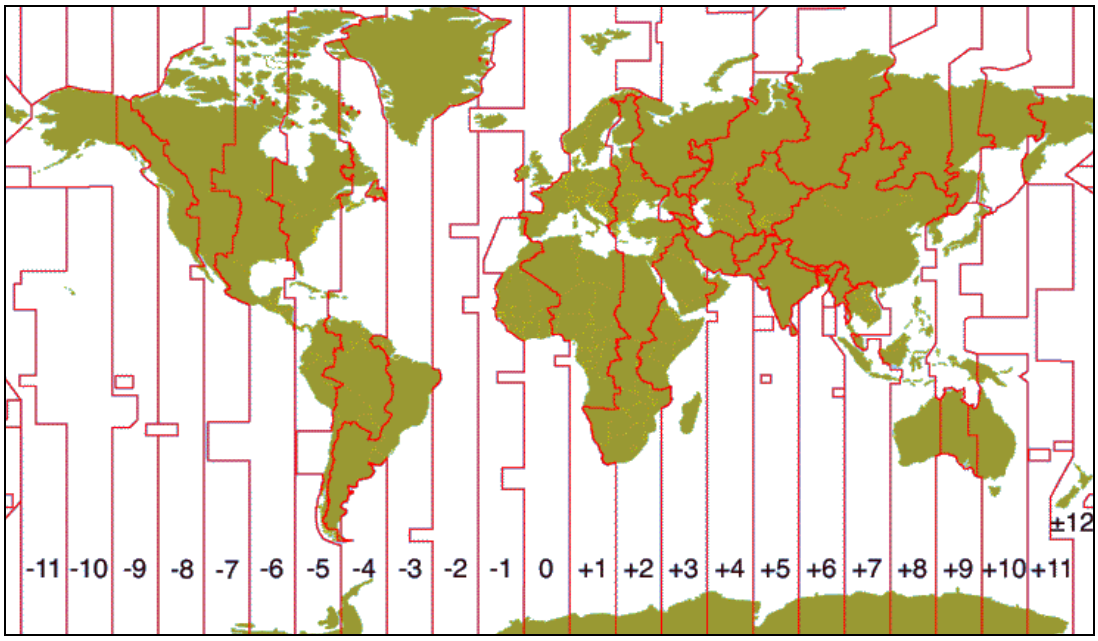
DST Bias

The item allows users to set the amount of time to move forward from the standard time for daylight saving time. The available options are in minutes.

3.4.3 Network Time Protocol Setup

Time Zone

Select <**Time Zone**> to enter the time zone. To find out the correct local time zone, please visit www.greenwichmeantime.com or refer to the following figure.



NOTE: The <**Time Zone**> must be set to the correct local time zone or the <**Network Time Protocol Setup**> will not be accessible.

Network Time Protocol Setup

After entering the time zone, the <**Network Time Protocol Setup**> option will appear. Select the <**Network Time Protocol Setup**> to set the time server. The default time server is time.nist.gov, but the user can change it to other time servers when desired. A list of IP addresses of the time servers is listed below.

129.6.15.28	129.6.15.29	132.163.4.101
132.163.4.102	132.163.4.103	128.138.140.44
192.43.244.18	131.107.1.10	69.25.96.13
206.246.118.250	208.184.49.9	64.125.78.85
207.200.81.113	64.236.96.53	68.216.79.113

After the time server is set, set <**Manually Time Sync**> to <Yes> to sync the time. The time sync can also be updated periodically. Set <**Automatically Time Sync**> to <ON>, and the time will be automatically synced once an hour.

3.5 Record Schedule / Quality Setting

The Record Setup menu allows users to set recording quality, recording schedules, and other recording parameters. Login with a proper account to access Record Setup menu. In the Main menu, move the cursor to <Record Setup> and press ENTER; the following menu is displayed.

Record Setup	
Record Mode Setup	
Schedule Setup	
Preset Config	Best Quality
Per Camera Config	
ezRecord Setup	
Data Lifetime	0 Days
Circular Recording	ON
Audio Recording	ON
Purge Data	

3.5.1 Record Mode Setup

The Record Mode Setup menu allows users to setup record resolution, etc. The relative record settings, such as preset configuration, will follow the record mode setting. The menu is displayed as the following.

Record Mode Setup	
Record Resolution	720*240
Record Format	H264
Max Rec. PPS	60
CBR/VBR	CBR

- Select record resolution of the video from 720*480, 720*240, and 352*240 for NTSC systems. If the video system is PAL, the options will be 720*576, 720*288, and 352*288.
- Select record format of the video from H.264 or MJPEG.
- The Max Rec. PPS will be changed automatically according to the record resolution selected.
- Set the recording bit rate as CBR (Constant Bit Rate) or VBR (Variable Bit Rate).

It is strongly suggested to use VBR encoding when reliable video quality is the top priority.

NOTE: Since a VBR file does not have a fixed size, the HDD space usage cannot be calculated and thus ezRecord function is not supported for VBR mode. Therefore, if ezRecord is selected as the preset record configuration, the option of this menu item will automatically be set as <CBR>.

3.5.2 Schedule Setup

The Schedule Setup is used to set the day and night time, or weekend recording schedule. Select <Schedule Setup> from the Record Setup menu and press ENTER; the following menu is displayed.

Schedule Setup	
Day Time Start	AM 06:00
Day Time End	PM 06:00
Night Time Start	PM 06:00
Night Time End	AM 06:00
Weekend Schedule	ON
Weekend Start	Fri 18:00
Weekend End	Mon 06:00

- Make appropriate changes of the start time of Day and Night Time using Direction keys.
- Press ENTER to confirm the settings or ESC to cancel.
- If a weekend record is required, select <ON> to enable the Weekend Schedule in advance and then set the Weekend Start/End time.
- Press ESC to return to previous page.

3.5.3 Preset Record Configuration

The <Preset Config> is used to select the preset recording quality and frame rate. In normal circumstances, it is strongly recommended to set the preset configuration as <Best Quality>. Below table shows the PPS and picture size under <Best Quality> in Half-D1 mode. Please refer to OSD Setup Manual, Section **Preset Record Configuration** for more detailed information.

Halfl-D1 mode (NTSC: 720x240@120PPS; PAL: 720x288@100PPS)			
Normal PPS	**Normal Size**	**Event PPS**	**Event Size**
7.5 NTSC (6.25 PAL)	10 KB / PIC	30 NTSC (25 PAL)	10 KB / PIC

3.5.4 Per Camera Configuration

This function is used to set the Day / Night / Weekend PPS (Picture per Second) and Quality for each channel. The Preset Configuration must be set to <OFF> for accessing these schedules. The menu is displayed as below (Record Mode: 720×240@120PPS in NTSC / 720×288@100PPS in PAL).

Per Camera Config			
Cameral Select			CH1
	Day	**Night**	**Weekend**
Normal PPS	7.5	7.5	7.5
Normal Size	Mid	Mid	Mid
Event Max PPS	30	30	30
Event Size	Best	Best	Best
Event Active	Both	Both	Both

- Firstly, select a Camera for setting its record configuration. The image and recording settings from the selected camera will be displayed on the screen.
- Move the cursor using Direction keys and press ENTER to select an item.
- Change the value using UP / DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Press ESC to return to Record Setup menu.

Please note that the total normal PPS for all channels cannot exceed 120 NTSC (720×240@120PPS) / 100 PAL (720×288@100PPS). To increase one channel's PPS, you may have to reduce others' first. Event PPS is not restricted to this rule, since a smart event scheduler will handle the total PPS with a correct weighting.

3.5.5 Record Event Video Only

If the DVR shall start recording only when alarms are triggered, follow the steps below:

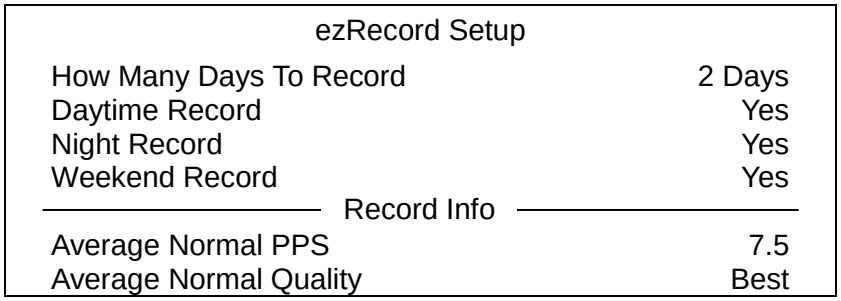
- Enter the OSD setup menu with correct password.
- In the OSD setup menu, select <Record Setup> menu. Move the cursor to the item <Preset Config>, and select <Event only>.

Refer to OSD Setup Manual, Section **Preset Record Configuration** for more detailed information.

3.5.6 ezRecord Setup

This item aims to ease the complicated record settings, and to make the setup much easier. Note that the item can be reached only when <ezRecord> is selected as the option for <Preset Config>.

Select <ezRecord Setup> from <Record Setup> and press ENTER, the sub-menu appears as below figure:



Follow these steps to Setup ezRecord:

- Select <How Many Days To Record> and press ENTER, then press UP/DOWN to choose an option. The average normal PPS & Quality will be adjusted automatically. The maximum of days depends of the size of the installed HDD. In other words, the larger the size of the HDD installed, the more days the unit can record.
- Move to <Daytime Record> and press ENTER. This item will determine whether the DVR will record during daytime. If yes, use UP/DOWN to select <Yes> as to enable daytime recording; or select <No> to disable.
- Repeat the same procedures through the 3rd and 4th item, respectively. Note that <Weekend Record> will be inaccessible if <Weekend Schedule> in <Schedule Setup> is set to <No>.
- Select <Average Normal PPS> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.
- Select <Average Normal Quality> and press ENTER, then press UP/DOWN to make a choice. The <How Many Days To Record> will be computed automatically.

NOTE: The current number of connected cameras will affect the recording quality automatically calculated through the <ezRecord Setup>. Therefore, once the number of connected cameras is changed, the <ezRecord Setup> should be reset.

3.5.7 Data Lifetime

Data Lifetime indicates the duration that a video is saved and recallable in the HDD. Only those video recorded within Data Lifetime can be displayed on the screen and played back. The video exceeded Data Lifetime will be hidden and cannot be retrieved for playback.

Press ENTER to select this item in Record Setup menu, and then use UP / DOWN keys to set the data lifetime. The value ranges from <1> to <365> days, or select <0> to disable the function.

NOTE: To play back a video exceeding the data lifetime, please extend the duration until the recording data / time of the video is included.

3.5.8 Circular Recording

Users can choose to record video in circular mode or in linear mode. If circular mode is selected, the DVR will stores new video into the HDD spaces while overwrite the oldest recorded video. Alternatively, if linear mode is selected, the DVR will stop recording when the HDD is full. The percentage of HDD usage will be displayed at the lower-left corner of the screen. Moreover, a reminder message "ALMOST FULL" will show up at the upper-right corner of the screen when HDD usage reached 98%. In the mean time, an internal buzzer will start beeping.

From the Record Setup menu, move the cursor to <Circular Recording> and press ENTER, then select <ON> / <OFF> using UP / DOWN keys.

3.5.9 Audio Recording

When an audio source device is connected, it will be automatically set to <ON>, audio input is recorded and saved with the video. When no audio source device is connected, it will be automatically set to <OFF>.

3.5.10 Purge Data

This item is used to delete the Normal or Event recording video. In Record Setup menu, move the cursor to <Purge Data> and press ENTER; the Purge Data menu is displayed.

Purge Data	
Purge All Data	No
Purge All Event Data	No
Purge Event Before	2008/01/01
Start To Purge	No

Purge All Data

The item is used to delete all recorded video from the database. Set this item to <Yes using UP / DOWN keys, and start the deletion by setting <Start To Purge> to <Yes>.

Purge All Event Data

The item is used to delete all event video from database(s). Using UP / DOWN keys to select <Yes> and start the deletion by setting <Start To Purge> to <Yes>.

Purge Event Before

The item is used to delete event video before a specific date. Use LEFT / RIGHT keys to move the cursor to next or previous field, ENTER to select the item and UP / DOWN to adjust the value.

Start To Purge

After the video or data to be deleted are selected, set this item to <Yes> to start the deletion or choose <No> to cancel.

3.6 Event Setting

This menu allows users to determine the DVR's behavior in response to alarm events. In the Main menu, move the cursor to <Event Setup> and press ENTER. The following menu is displayed. Items in the Event Setup menu are described in the following subsections.

Event Setup	
Internal Buzzer	ON
Event Icon	ON
Email Notice	OFF
Email Attachment	OFF
Alert Notification Setup	
Event Full Screen	None
Event Duration	20 Sec
Per Channel Config	

3.6.1 Internal Buzzer

This item allows users to enable / disable internal buzzer of the DVR. If <ON> is selected, the buzzer is activated in response to alarm events. If <OFF> is selected, the buzzer is not activated.

3.6.2 Event Icon

This item enables (ON) / disables (OFF) the display of event icons on the monitor when alarm events occur. The event icons are represented by a character according to the event types respectively. Refer to the following table for association of event icons and event types.

Event Icon	Event Type
A	Alarm in event
M	Motion detection event
L	Video loss event

3.6.3 Email Notice

The item enables (ON) / disables (OFF) the Email notification of an event. When an alarm event is triggered and <Email Notice> is enabled, an e-mail concerning the alarm event will be sent.

NOTE: In order to send an event notification e-mail successfully, ensure that the DVR is connecting to the internet.

3.6.4 Email Attachment

The function allows the DVR to send out a brief AVI video regarding the event. The number of the attached AVI video will be equivalent to the number of cameras connected to the DVR. For example, if the DVR has been connected with 8 cameras, then 8 videos will be attached to the notice email. The total size of the video will be about 2 MB. Select <ON> to enable this function; or <OFF> to disable it.

NOTE: The video clips of the Email Attachment will ONLY be in *.avi format. Please download the Divx Player from www.divx.com to play the *.avi files.

3.6.5 Alert Notification Setup

This function allows users to send alert notifications to the CMS software which had been installed to users' computer. For further setup instruction at the CMS side, please refer to the CMS user's manual.

Alert Notification Setup	
Alert Configuration Set	1
Alert Notification	OFF
Alert IP	0.0.0.0
Alert Port	9999
Alive Interval	120 Sec

3.6.5.1 Alert Configuration Set

<Alert Configuration Set> provides 3 combinations of Alert Notification, IP, Port, and Interval.

3.6.5.2 Alert Notification

4 options are included in this item: <OFF>, <Event>, <Alive>, and <Both>.

<**OFF**>: The Alert Notification is turned off.

<**Event**>: When the alarm is triggered, the DVR will send an alert message to the CMS.

<**Alive**>: The DVR will send an alive message to the CMS every *N* second just to show you that the connection between the DVR and CMS is in effect. The time interval *N* can be adjusted in <Alive Interval>.

<**Both**>: This enables the DVR to send both Event and Alive alert messages to the CMS.

3.6.5.3 Alert IP

The Alert IP must match the IP address of the computer installed the CMS.

3.6.5.4 Alert Port

The ports for DVR and the CMS Alert **MUST** be the same.

3.6.5.5 Alert Interval

Users can define the time interval (1 to 255 seconds) between each alive message.

3.6.6 Event Full Screen

This function allows the DVR to display the alarm channel in full screen size when an alarm is triggered. Select <None> to disable this function; select <Main> to display the alarm channel on Main Monitor when an alarm is triggered; select <Call> to display the alarm channel on Call Monitor; and select <Both> to display the alarm channel on both Main Monitor and Call Monitor.

3.6.7 Event Duration

This item determines the duration of the buzzer and Alarm Out relay function after an alarm is triggered. The available event duration range is from 5 second to 999 seconds.

3.6.8 Per Channel Config

This menu is used to configure the <Video Loss Detect>, **<**Motion Detect>, <Alarm In> and <Alarm Out> settings for each channel. The menu is displayed as below.

Per Channel Config	
Channel Select	CH1
Video Loss Detect	OFF
Motion Detect	OFF
Motion Detect Indicator	ON
Detection Config	
Alarm In	OFF
Alarm Out	ON

3.6.8.1 Channel Select

The item is used to select a desired channel for setting the parameters. Move the cursor to <Channel Select> and press ENTER, then select a channel using UP / DOWN keys. Press ENTER again to confirm the selection.

3.6.8.2 Video Loss Detect

This item allows users to enable or disable Video Loss as an alarm event. Select <ON> to enable Video Loss alarm events, or <OFF> to disable.

3.6.8.3 Motion Detect

This item allows users to enable or disable motion detection function of the DVR. Select <ON> to enable Motion Detect alarm events, or <OFF> to disable. If motion detection function is enabled, it is required to define motion detection parameters such as detection area and sensitivity settings in <Detection Config>.

3.6.8.4 Motion Detect Indicator

This item allows users to display/ hide the motion detection indicators. Select <ON> to display the indicators, or <OFF> to hide them.

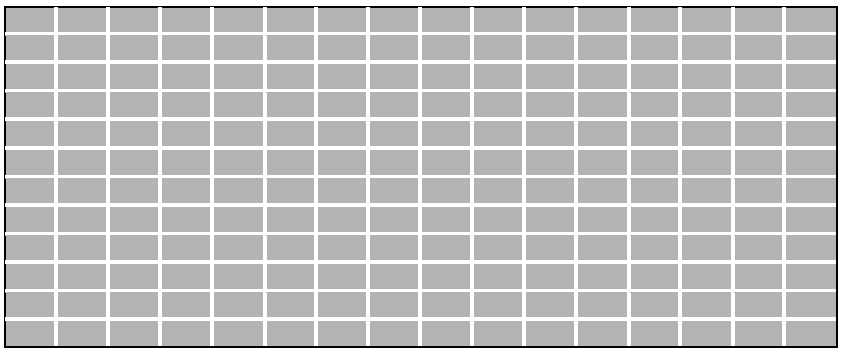
3.6.8.5 Detection Configuration

If motion detection function is enabled, it is required to define the motion detection parameters such as detection area and sensitivity settings. Select a channel for setting the parameters, move the cursor to <Detection Config> and press ENTER. The Detection Configuration menu displays as follows.

Detection Config	
Detected Area Setup	
Sensitivity	88%
Block Threshold	4

Detected Area Setup

After selected this item, the detected area is displayed as follows. The detection area consists of 192 (16×12) detection grids.



Use the Direction keys to move the cursor and press ENTER to select or de-select a grid. Press MODE to select all of the grids for detection; press MODE again to de-select all of the grids.

Sensitivity

This item is used to set the sensitivity of detection grids for the camera. A greater value indicates more sensitive motion detection. A motion alarm will be triggered once the amount of motion detected exceeds the Threshold value.

Move the cursor to <Sensitivity> and press ENTER, and then use UP/ DOWN keys to adjust the value. The value is increased by 4% increment.

Block Threshold

<Block Threshold> indicates the motion alarm triggered level; select from <1> to <16>. Selecting <1> means the DVR will trigger the alarm when one grid is detected; and selecting <16> means the DVR will trigger the alarm when 16 grids are detected. Move the cursor to <Block Threshold> and press ENTER, and then use UP / DOWN keys to adjust the value.

3.6.8.6 Alarm In

This item allows users to enable/ disable alarm input detection. According to users' application, select <N/O> (Normal Open) or <N/C> (Normal Close) to enable the alarm input detection, or select <OFF> to disable the detection.

If <N/C> is selected without installing any device, an alarm will be triggered and the Event Icon will always display on the monitor until the selection is changed to <N/O> or <OFF>, or when a device is installed.

3.6.8.7 Alarm Out

This item allows users to enable/ disable the alarm output on the selected channel to activate the relay. The signal can be a light or siren to caution an alarm event. Select <ON> to enable the alarm output, or <OFF> to disable.

4. Basic Operation

The DVR allows users to access some general operations through the front panel easily. The following sections introduce the general operations of the unit.

4.1 View Live / Playback Video

The general functions in live and playback mode are described in the following sections.

4.1.1 Viewing Modes

The DVR provides users versatile ways of viewing both live and recorded video. Following presents these view formats.

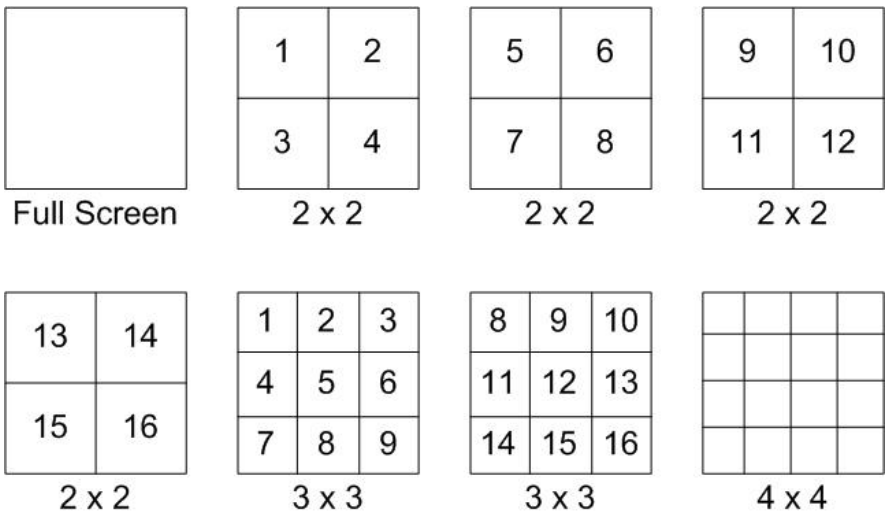
Viewing in Full Screen

Press any CHANNEL key directly to view the corresponding camera image in full screen format.

Viewing in Multi-window

Various multi-window view formats are offered for selection. To switch between available viewing formats, press MODE repeatedly.

The available view formats are illustrated as the following figure.



NOTE: 3x3 viewing mode is only available in 8-ch and 16-ch models, whereas 4x4 viewing mode is only available in 16-ch models.

4.1.2 Digital Zoom

Users are able to view a 2× full screen in live mode. To view the 2× full screen, follow the steps.

- Press any CHANNEL key to view the corresponding camera in full screen.
- Press ENTER to view 2× zoomed screen of the selected camera.
- To view a specific area in 2× zoomed screen, use Direction keys to pan / tilt the zoomed screen.
- Either press ENTER again or ESC to leave the Zoom mode.

4.1.3 View Live Cameras

Users are allowed to view live camera in versatile viewing modes, including full-screen, 2×2, 3x3 and 4×4. The general operation under live mode is described as follows.

Freeze Live Image

Press FREEZE while viewing live image, the image pauses but the date / time information does not, and the system clock continues running.

Press FREEZE to pause the live image; press FREEZE again to resume the live camera view.

4.1.4 View Recorded Video

To view recorded video, users can press PLAY key directly. When press the PLAY key, the unit starts to continue playing back the recorded video from the suspended point of record. If it is the first time to use the PLAY key, the unit will playback from the very beginning of the record. Alternatively, users can select records from the Search menu to play specific video. Refer to section **Searching Recorded Video** for more information.

NOTE: When playing back videos with mass motion recorded in D1 mode (resolution=720x480), press SEQ key to switch on "deflicker function" to avoid gleaming of images. Press SEQ again to switch "deflicker off" and the image will return to real D1 resolution.

The Forward or Reverse speed indicator will be shown on the bottom-left corner of the screen, when in the playback mode.

The general operations in playback mode are described as follows.

Key Usage in Playback

The key usage is slightly different in playback mode. Following is the key usage found in playback mode.

- **LEFT** (Reverse Playback): The key is used to reverse the recorded video while the unit is playing back. Press the key repeatedly to increase the speed of reverse playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **RIGHT** (Forward Playback): The key is used to play the recorded video fast forward. Press the key repeatedly to increase the speed of forward playback by 1×, 2×, 4×, 8×, 16×, or 32×.

- **FREEZE:** Press FREEZE to pause the playback video. When the recorded video is paused, press LEFT / RIGHT to resume playback video single step reverse / forward, respectively. Press FREEZE again to continue playing video.

- **PLAY:** Press it to start playing back video, exit current mode, or stop playing back video and return to live mode.

Pause Playback and Single Step Forward

To pause and resume recorded video, follow these steps.

- Press any CHANNEL key to view the corresponding camera in full screen.
- Press FREEZE to pause the current playback image.
- Press LEFT / RIGHT Direction keys to move the video single step reverse / forward. Press and hold LEFT / RIGHT keys to repeatedly reverse / forward the video single step.
- Press FREEZE again to resume the playback operation.

4.1.5 Taking Snapshots

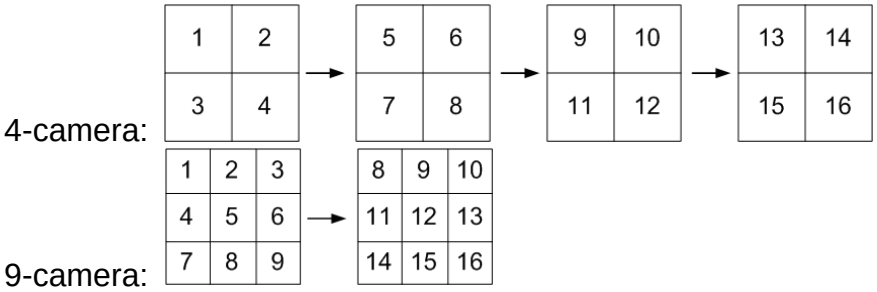
When a live or playback video of a single channel display is paused, users can press ENTER key to capture and export snapshots to an external storage device, excluding optical drives. Note that the system log will keep a record of any snapshot exportation.

4.2 Sequence

This section introduces the way to view sequence mode with both Main Monitor and Call Monitor, if connected. Sequence function can avoid manual backtracking and provides more flexibility while monitoring surveillance.

4.2.1 Sequence with Main Monitor

Automatic sequence function can be observed in any view mode. Select certain view format and press SEQ to toggle the automatic sequence; press ESC to stop sequencing. The figure below displays the 4-camera and 9-camera sequencing view modes.



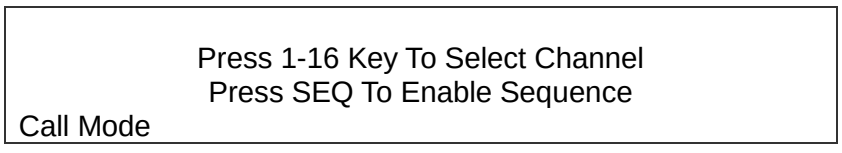
(for 16ch models only)

4.2.2 Sequence with Call Monitor(8CH & 16CH models only)

Users are allowed to use the DVR front panel to control a call monitor display without having to access the Main menu. Two viewing modes can be displayed on call monitor: Sequence display and Single camera display. To program the call monitor sequence, see OSD Setup Manual, Section **Sequence Setup**.

Follow the steps to control the call monitor.

- Press the CALL key on the front panel to enter Call Monitor Control mode. The message "Call Mode" will be shown on the bottom-left of the screen.

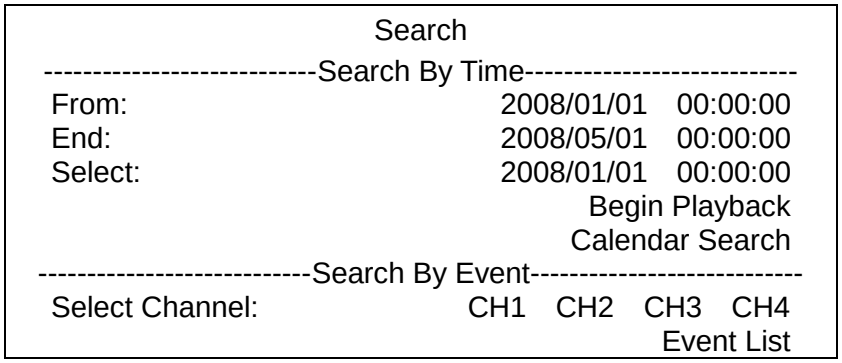


- Press CHANNEL key to display the associated camera on call monitor.
- Alternatively, press SEQ repeatedly to display the sequence of cameras previously programmed in Call Monitor Schedule menu.
- Press ESC to return the front panel to Main Monitor Control mode.

4.3 Search Recorded Video

The DVR is capable of searching and playing back recorded video by time or by events. To search by time, select a specific date and time of the wanted video or enter Calendar Search. To search by event, select channels to display the event list.

In live or playback mode, press SEARCH to enter the Search menu, shown as below.



4.3.1 Search by Time

Follow the steps to search video by date and time.

- Press SEARCH to enter the Search menu.
- Move the cursor to "From" and press ENTER will start playing recorded video from the specified "From" time.
- Move the cursor to "End" and press ENTER will start playing recorded video from the specified "End" time.
- Move the cursor to "Select" and press LEFT/RIGHT keys to choose date/ time. Press ENTER and adjust the values by UP/DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Move the cursor to <Begin Playback> and press ENTER to start playing back the selected video.
- Press PLAY again to return to live video.

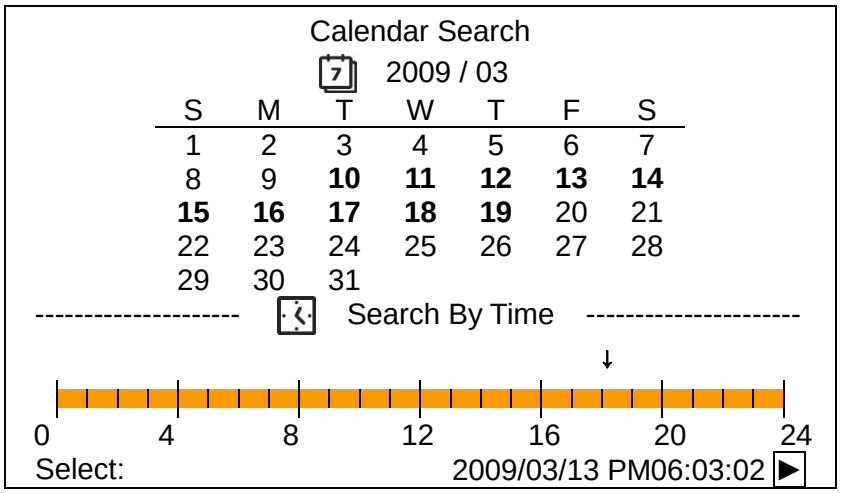
NOTE: If there is no available recorded video that matches the specified time and date, the unit starts playback from the next available video.

NOTE: The date/time information will be shown on the screen with a DST icon if the Daylight Saving Time function is enabled. "S" indicates summer time and "W" indicates winter time.

4.3.2 Calendar Search

Follow the steps below to search recorded video via Calendar Search.

- Press SEARCH button to enter the Search menu.
- Move the cursor to <Calendar Search> and press ENTER. A calendar will be shown as below.



- Move the cursor to year/ month and press ENTER. Then press UP/DOWN keys to adjust the value and press ENTER again to confirm.
- Move the cursor to select any day shown in bold font, and a time ruler will be displayed.
- Press ENTER and an arrow will show up above the time ruler. Press LEFT/RIGHT keys to select a desired time. Alternatively, move the cursor to the time shown at the bottom. Press ENTER and adjust the values of hour/ minute/ second via UP/DOWN keys.
- Note that the time blocks highlighted in red represent events occurred.
- Move the cursor to the playback icon (▶) and press ENTER to start playing back the video.

4.3.3 Search by Event

"Event List" allows users to search wanted video by event. The Event List is displayed as below figure:

Event List

First Page

Date	Time	Ch.	Type
2008/03/17	11:26:50	2	Motion
2008/03/17	09:53:03	5	Alarm
2008/03/16	16:14:42	3	Alarm
2008/03/15	03:45:31	1	Motion
2008/03/12	22:27:56	1	Alarm
2008/03/12	10:09:29	7	Motion
2008/03/11	12:18:20	6	Motion
2008/03/10	05:16:00	4	Alarm
2008/03/08	17:11:37	2	Motion
2008/03/08	16:29:10	8	Motion
2008/03/08	03:22:17	2	Alarm

The list displays events by date, time, triggered camera and alarm type. As some events are deleted, others are displayed. The latest recorded event video will be listed on the top.

Follow these steps to search event video through Event List:

- Press SEARCH to enter the Search menu.
- To search event video that has been recorded on a specific camera, use LEFT / RIGHT to move the cursor and press ENTER to select or de-select a channel.
- Move the cursor to <Event List> and press ENTER to list the event video of the selected channels. The Event List displays.
- To exit the event list, press ESC.

Follow the steps to playback video from Event List.

- Press and hold UP / DOWN to scroll through the Event List.
- Press ENTER to play back the selected event record.
- Press PLAY to return to live mode.

4.4 Video Export

The unit allows users to export wanted video to the built-in DVD+RW or an external device, such as a USB ThumbDrive, and the exported video will be saved as *.drv file. Note that the system log will keep records of all video exportations, including duration, start time, and end time.

If the video is to be exported to an external device, make sure the device is connected to the DVR unit and the port has been set appropriately for video export.

NOTE: Once an external device is connected to the DVR unit, the device has priority over the built-in DVD+RW. That means the video will be exported to the external device instead of the built-in DVD+RW.

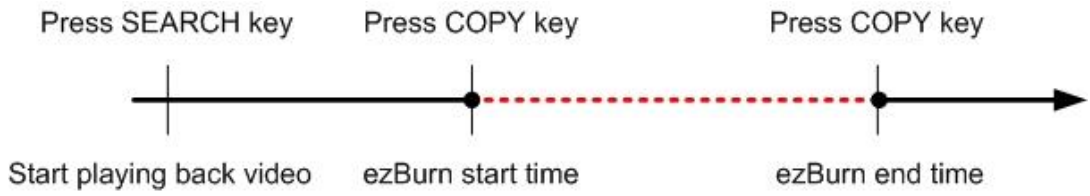
According to the size of video, the export may take about 10 minutes to 1 hour.

4.4.1 ezBurn Introduction

Built with the ezBurn technology, ezBurn function provides users the easier way to export desired video with built-in DVD+RW or to an external device, such as an USB ThumbDrive®.

TWO keys (SEARCH and COPY) and THREE touches are all what's needed for completing the export. The entire exporting process will be done through the front panel, without needing to enter the OSD setup menu.

The ezBurn exporting process is illustrated as below figure:



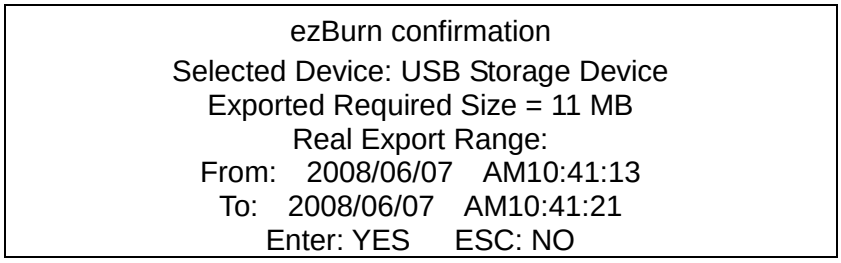
The entire process is described step by step in the following sections.

NOTE: The file exported using ezBurn will be in .drv file format, and it can only be played using the remote player software.

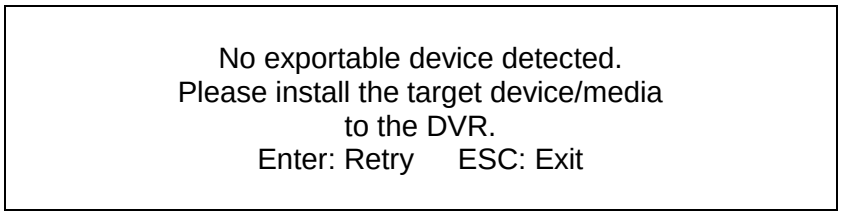
4.4.2 Export Normal Video

To Export normal video to external device, follow these step:

- Press SEARCH and play wanted normal video by entering date and time. Note if the screen is showing in multiple channel mode, please make sure there is no window displaying in Live mode, or the export will not work.
- After entering playback mode, play the video and press COPY once to mark the starting point of the export video. The playback continues.
- Press COPY again to mark the ending point of the export video. Then the "ezBurn" window will display as below figure. The information shown on the window is "read only".



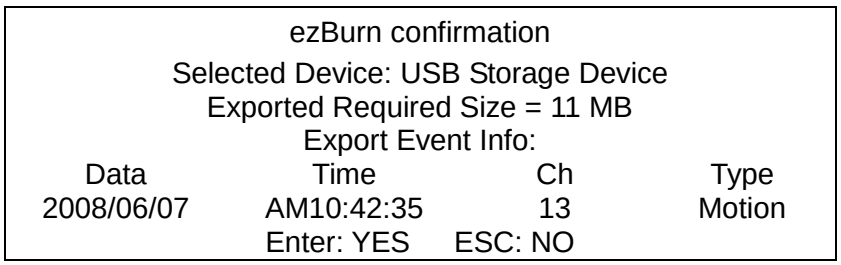
- Press ENTER to start the export; or, press ESC to abort.
- If there is no any exportable device connected to the DVR unit, then a warning message will be shown on the screen, as below figure:



4.4.3 Export Event Video

To export event video, follow these steps:

- Press SEARCH and play wanted event video. To play event video, refer to Section **Searching Recorded Video**.
- After entering the playback mode, press COPY. The "ezBurn" window will display as below figure. The information shown is "read only".


ezBurn confirmation
Selected Device: USB Storage Device
Exported Required Size = 11 MB
Export Event Info:
Data Time Ch Type
2008/06/07 AM10:42:35 13 Motion
Enter: YES ESC: NO

- If there is no any exportable device connected to the DVR unit, a warning message will be shown on the screen
- Press ENTER to start the export the whole event video to the connected device; or, press ESC to abort.

4.5 Dome Control

The DVR allows users to control a dome camera by the front panel. In Live mode, users can press CHANNEL key to display the desired dome camera in full screen. To enter Dome Control mode, press the DOME key and press channel key 2 to display the hint screen. To exit the Dome Control mode and return to live mode, press ESC or DOME.

In dome control mode, press CALL + ENTER to open the OSD setup menu of the dome camera. To traverse the menu, press CALL + UP/DOWN keys to move up/down, CALL + RIGHT/LEFT to change value or to move left/right, and CALL + ENTER to select or enter submenu.

4.5.1 Dome Connection

Follow the steps to install dome cameras.

- See ***Setup Guide*** for RS-485 port pin definition.
- Connect the R+, R- terminals on the dome camera to the D+, D- terminals on the RS-485 port by RS-485 cable respectively. Refer to the connection figure illustrated in ***Setup Guide***.

4.5.2 Dome Protocol Setup

The Dome Protocol item lists the available dome protocols for communicating with dome cameras connected to the DVR. From the Main menu, select <Camera Setup> and press ENTER. The following menu is displayed.

Analog Camera	
Analog Camera Select	CH1
Dome Protocol	None
Dome ID	0
Camera Title	
Covert	No
Brightness	0
Contrast	0
Saturation	0
Hue	0
Audio Association	Yes

To configure dome protocol, select a camera first and set the communications protocol associated with dome camera using the Direction keys and ENTER.

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.5.3 RS485 Setup

The DVR controls the domes via RS-485 communication protocol. The RS-485 parameters in the DVR must be set to the same parameters set in dome camera.

Users are allowed to change the RS-485 settings of the DVR. Select <System Setup> in Main menu, then select <RS485 Setup> from the System Setup menu and press ENTER. The following menu is displayed.

RS485 Setup	
Unit ID	224
Baud Rate	9600
Bits	8
Stop	1
Parity	None

The ID number must match the ID address set by the dome. The Unit ID is in the range of 1 to 255. Note that there cannot be any two devices on the same bus given the same ID address, or a conflict may occur.

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.5.4 Dome Controlling Keys

The functions of some keys in Dome Control mode are totally different from normal status function. Please refer to ***Setup Guide*** for the graphical illustration of functional keys.

Set / Go Preset

This key is used to enter the Dome Preset menu to set up certain position as a preset and go to the predetermined preset positions for viewing.

Toggle Hint Screen

This function is used to avoid viewing the dome parameter information while controlling dome cameras. Press this key to hide the screen. Press it again to redisplay the screen.

Iris Open

Use to open the Iris on the dome camera.

Focus Near

Use to focus the dome camera near.

Zoom In

Use to zoom in the dome camera. This function enables users to enlarge a certain area.

ESC

Use to leave Dome Control mode and return to live and full-screen viewing mode.

Auto / Enter

- In OSD setup menu interface, the key is used to make selection.
- In Dome Control mode, this key is used to activate automatic focus and iris function.

Iris Close

Use to close the Iris on the dome camera.

Focus Far

Use to focus the selected dome camera far.

Zoom Out

Use to zoom out the dome camera. This function enables users to shrink the current image and view a larger area.

Pan / Tilt

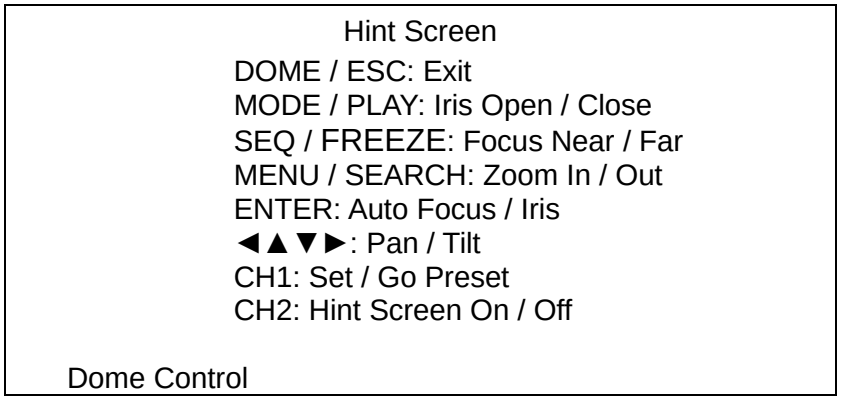
Use to pan and tilt dome camera.

4.5.5 Setting Preset Points

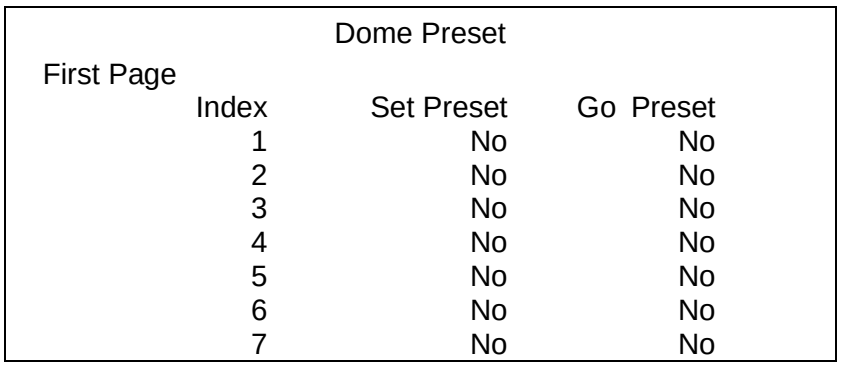
The DVR allows users to set preset positions. The amount of preset points depends on the dome manufacturer.

Follow the steps to set preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter Dome Control mode. A Hint Screen shown as below figure displays on the screen.
- Press 2 to hide the Hint Screen; press 2 again to toggle the Hint Screen.
- Use Direction keys to position the dome camera to desired position.


Hint Screen
DOME / ESC: Exit
MODE / PLAY: Iris Open / Close
SEQ / FREEZE: Focus Near / Far
MENU / SEARCH: Zoom In / Out
ENTER: Auto Focus / Iris
◄▲▼►: Pan / Tilt
CH1: Set / Go Preset
CH2: Hint Screen On / Off
Dome Control

- Press 1 to access the Set/Go Preset function. The Dome Preset menu is displayed.



- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Set Preset> of the selected preset number to <Yes>, and press ENTER to save the position. Now the preset is set and ready to be called.

4.5.6 Calling Preset Points

Follow the steps to call preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter Dome Control mode. A Hint Screen will be displayed on the screen.
- Press 2 to hide or display the Dome Control Hint Screen.
- Press 1 to access the Set/Go Preset function.

Dome Preset

First Page

Index	Set Preset	Go Preset
1	No	No
2	No	No
3	No	No
4	No	No
5	No	No
6	No	No
7	No	No

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Go Preset> of the selected preset number to <Yes>, and press ENTER to call the preset point.
- The selected dome camera will rotate to the preset position automatically.

4.6 System Log Exportation

In the Configuration setup menu, select <Boot Log> and a list of system logs will be displayed on the screen. Users can export the system log as a data file to an external storage device. Connect a USB storage device and press COPY to export the system log file to the USB storage device. Note that in the mean time, a digital signature file will also be exported.

Configuration

Load Factory Default	No
Import Config	
Export Config	
Boot Log	
Operation Log	Off

Also under the Configuration setup menu, set <Operation Log> to <On> and operation logs will start to be recorded in the system log. Alternatively, set to <Off> and operation logs will not be part of the system log.

5. Remote Monitoring Software

The remote monitoring software is a remote browser-based software application designed to operate with the DVR products. Using the software, users are allowed to view live and recorded video, and configure the DVRs remotely via a LAN, WAN or Internet on a personal computer.

The connected PC will automatically download the remote monitoring software plug-ins from the DVR when the DVR is connected by entering its IP address in the address bar on the browser.

Due to the setting items are similar to those listed in the DVR's OSD setup menu, please refer to the sections above for setting configuration of the remote monitoring software.

The tasks can be performed with the remote monitoring software are listed below:

- Remote viewing of live/ recorded video
- Remote setup of the DVR
- Remote control of dome cameras
- Alarm notification from the DVR
- Up to three connections to one DVR using the remote monitoring software, including the preset "admin" and two other accounts

5.1 Remote Monitoring System Requirements

Items	Minimum Requirements
Personal Computer	**Minimum:** Intel® Pentium® M CPU 1.40GHz RAM 512 MB
	Recommended: Intel® Core™2 Quad CPU Q6600 @ 2.4GHZ RAM 2 GB
Hard Disk Drive	Requires 20 MB for software installation
Operating System	Windows XP, Windows Vista
Web Browser	Microsoft Internet Explorer version 6.0 or above
Monitor Resolution	Minimum 1024 x 768 with 16-bit color
Network Card	10Base-T (10 Mbps) or 100Base-TX (100 Mbps) operation; must match the network configuration

5.2 Installation of Software

Refer to the following description to install the remote monitoring software.

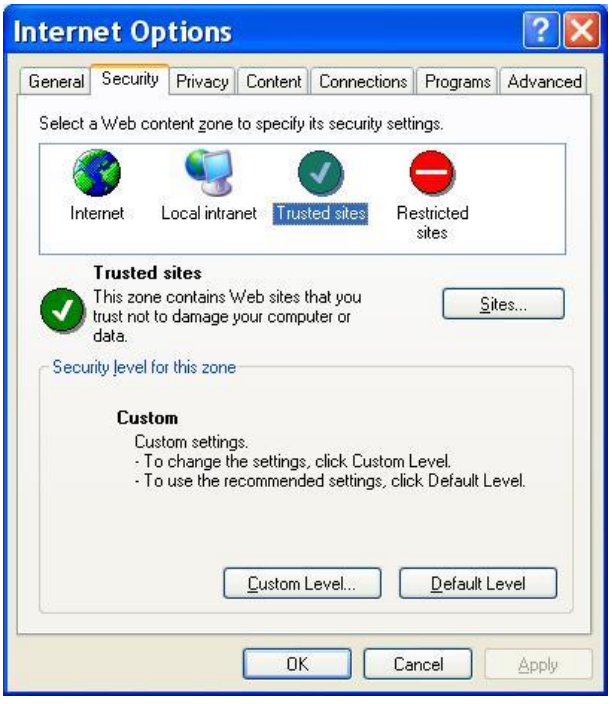
5.2.1 Change Internet Settings

The PC operating with the remote monitoring software should be set to accept ActiveX plug-ins. Please follow the steps to set the Internet security settings appropriately.

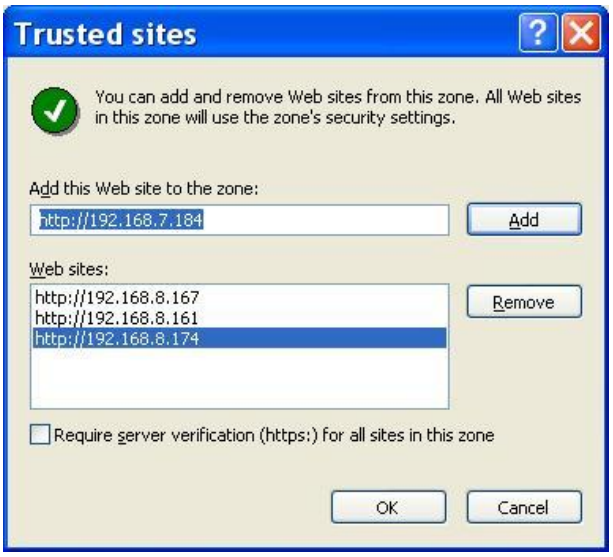
- Before operating the remote monitoring software, please check the IP address of the DVR. To check the IP address, press MENU key on the unit and enter password to access OSD setup menu. Select <System Setup>, <Network Setup>, then <LAN Setup> to check the IP.
- Start the IE; it can be started either by clicking on the desktop icon, or by using the Start menu to access it.

NOTE: Windows IE provides the ActiveX component that is required when using the remote monitoring software.

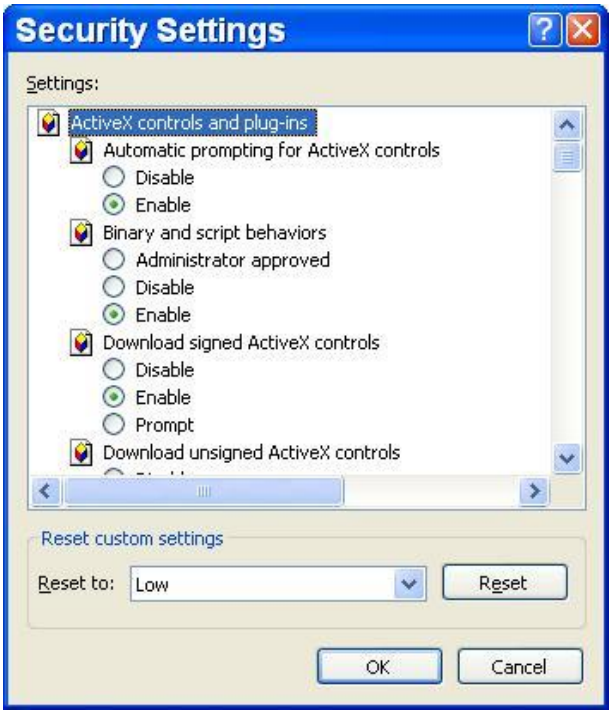
- Select <Tools> from the main menu of the browser, then <Internet Options>, and then click the <Security> tab.
- Select <Trusted sites> and click <Sites> to specify its security setting.



- Uncheck "Require server verification (https:) for all sites in this zone". Type the IP address of the unit in field and click <Add> to add this web site to the zone.



- Click <OK> to confirm the setting and close Trusted sites dialog.
- In the Security Level area, click <Custom Level>. The Security Settings screen is displayed.



- Under <ActiveX controls and plug-ins>, set all items to <Enable> or <Prompt>.
- Click <OK> to apply the setting and close the <Security Settings> screen.
- Click <OK> to close Internet Options dialog.

Now the installation can continue to the next step.

5.2.2 Install the Remote Monitoring Software

Start the browser to initiate the installation of the remote monitoring software on the PC. The IP address of the DVR can be saved as a Favorites item in the web browser to enable easy access in the future.

- Start the IE; it can be started either by clicking on the desktop icon, or by using the Start menu to access it.
- Enter the IP address of the DVR in the address bar at the top of the browser.
- The ActiveX controls and plug-ins dialog will show twice for confirmation; click <Yes> to accept ActiveX plug-ins. The remote monitoring software plug-ins will be downloaded and installed on the PC automatically when the connection is successfully made.

NOTE: Do not enter any leading "0" characters in the address, for example, "192.068.080.006" should be entered as "192.68.80.6". If the default trigger port 80 is changed into another one, take port 81 for example, the IP address should be entered as "192.68.80.6:81".

- A version check starts to verify whether the remote monitoring software was installed already, and also check if the version is the same as that stored in that particular DVR. This process may take up to 30 seconds.
- When the software is completely downloaded and installed, the Login Screen is now displayed.

Enter Network Password
This secure Web Site (at 192.168.7.184) requires you to log on.
Please type the User Name and Password that you use for DVR.
User Name
user
Password
Save this password in your password list
OK
Cancel

5.2.2.1 Login / Logout

Login using the same accounts setup in the DVR. The authority is also the same as setup in the DVR.

One preset account "admin" and up to two other accounts can access a DVR at the same time. Nevertheless, if the "admin" account is currently accessing the unit's OSD setup menu via front panel of the unit, then the "admin" account at the remote monitoring site cannot change the settings at the same time. The "admin" account of the DVR has priority.

Enter Network Password
This secure Web Site (at 192.168.7.184) requires you to log on.
Please type the User Name and Password that you use for DVR.
User Name
user
Password
****
Save this password in your password list
OK
Cancel

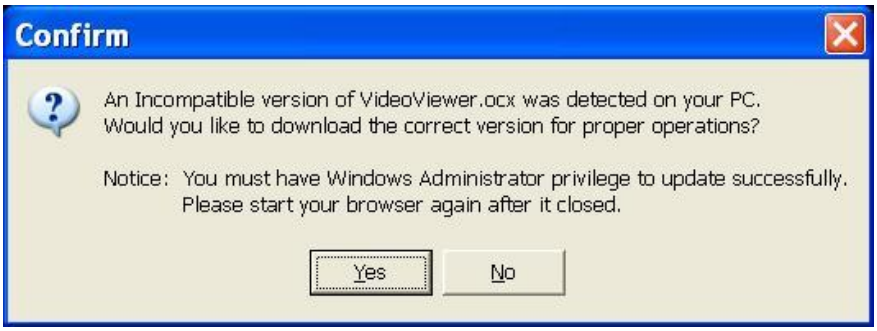
The following steps demonstrate procedures to view video from remote unit:

- Start the remote monitoring software by entering the IP Address of the DVR in the Address bar of the browser. Alternatively, click on the Favorite entry for the unit (if the IP address of the unit has been set).
- Enter the Username and password. The login username and password can be saved to ease future login. The default username and password is **admin** / **1234**.
- Click <OK> to login to the DVR. The process may take a few seconds.
- If the connection is made successfully, the main window will display live video of the attached cameras.

If the IE browser is closed, the remote system is logout and disconnected from the DVR at the same time.

5.2.2.2 Software Upgrades

If a new version of the remote monitoring software is available on the DVR, upgrade will be prompted while accessing the unit. Follow the steps to upgrade the software.


Confirm
An Incompatible version of VideoViewer.ocx was detected on your PC.
Would you like to download the correct version for proper operations?
Notice: You must have Windows Administrator privilege to update successfully.
Please start your browser again after it closed.
Yes
No

- The message as the above figure will be prompted. Click <Yes> to accept version upgrade.
- Start the IE again and enter the IP address of the DVR in the Address bar of the browser; or if the unit address is set as a Favorite site, click the Favorites entry for the unit.
- When the software is completely downloaded and installed, the Login Screen will be displayed.

5.3 Basic Operation

When a DVR is successfully connected, the main window of the remote monitoring software will be displayed. Please refer to the ***Setup Guide*** for the graphical illustration of functional items.

The functions on the remote monitoring software will be described in the following sections.

5.3.1 View Live Video

View live video from the cameras attached to the DVR by clicking <Live> button on the main window toolbar. Choose desired display mode – full-screen, 2x2 windows, 3x3 windows, and 4x4 windows – after the live images of the DVR are displayed on the main window. When a dome camera is connected and viewed in single channel full-screen mode, the dome camera control operation can be accessed. To choose desired display mode and to operate dome camera control, refer to the following sections.

5.3.1.1 Select Display Mode

Choose the number of windows to be displayed on the main window. Click one of the display buttons in MODE section. Available selections are 4, 9 and 16 camera displays. To view certain window in full screen, either double-click on the wanted window, or click on the corresponding CAMERA button.

5.3.1.2 Operating Cameras with Dome Control

The remote monitoring software allows users to control and configure a dome camera remotely.

Click on any CAMERA button displayed with a dome icon to view the camera in full screen. The Dome Control Panel will be displayed on the main window. The items on the dome control panel are described as follows.

Set Preset (•)

Set Preset is used to set up preset positions. The remote monitoring software allows its user to set up to 255 preset positions according to the allowance of the supported dome cameras.

Use Direction buttons to move dome camera to an appropriate position, and then click the button and choose wanted number from the pull-down list. The preset position is named as the selected number.

Go Preset (•←)

Go Preset is used to call the camera preset point, which was set up with the set preset point function. Click and choose a number to call the preset point for viewing.

Auto Focus (A.F.)

Click on it and the focus of the camera will be automatically adjusted to show a clearer image.

Dome ID (ID)

Click for changing the dome ID and protocol. Proper authority is required to access this function.

Focus +/−

Use to adjust the camera lens to focus on objects for a clear view. Click on <Focus +> to focus near or <Focus −> to focus far.

Iris +/−

This item is used to open and close the iris to let more or less light into the camera. Click on <Iris +> to open iris or <Iris −> to close iris.

Zoom +/−

Users are allowed to zoom-in or zoom-out using the adjusting buttons. Zoom-in to enlarge a certain area and zoom-out to view more area.

Direction Button

This button is used to pan and/or tilt the dome camera. Click the arrows in the directions to be viewed.

5.3.2 Instant Recording

The Instant Recording function allows users to record video quickly to the PC.

NOTE: The Audio function is set to OFF as the default setting.

5.3.2.1 Record Video Instantly

Follow the steps to start recording instantly:

- Click on the <Instant Recording> button.
- Select the destination folder to save the video.
- Click on the button again to stop recording.

NOTE: The instant recording video will be saved as *.drv file.

5.3.2.2 Playback Instant Recorded Video

Follow the steps to playback a video recorded by "Instant Recording".

- Click <Play> on main window toolbar and click <Local Playback> tab.
- Click <Open> to choose a recorded file.
- Click <OK> to start playing the recorded video.

5.3.3 Playback Video

The remote monitoring software allows users to view recorded video either from the DVR, or from the hard disk drive of the PC

To access the Playback screen, click <Play> button on the main window toolbar. There are three tabs in the Playback screen: <Remote Playback>, <Local Playback>, and <Verify> tabs. <Remote Playback> allows users to play back from the DVR. <Local Playback> enables users to playback a recorded video file stored on the hard disk drive of the PC. <Verify> is provided for users to authenticate if the exported video is altered.

The DVR continues recording while playing back recorded video on the PC, either remote playback or local playback.

5.3.3.1 Playback Remote Video

To view remote video, click <Play> on the main window toolbar, and then <Remote Playback> tab. The <Remote Playback> screen will be displayed.

The <From> and <To> in the <Available Record Video> display the date and time from which recorded video is available for playback.

To playback remote video segments, follow these steps:

- Choose <Playback> in <Select> field for playback recorded video.
- In <Start> field, users can change the date and time either by typing desired numbers directly or using the arrow buttons.

  To type directly:
  Click on day, month and year of date field respectively, and type the desired numbers directly. Follow above steps to adjust the hour, minute and second of time field.

  To use the arrow buttons:
  Click on the arrow button next to the date field to display the calendar; then click the left and right arrow at the top of the calendar to change the date. Use up and down arrow next to the time field to change to the wanted time.

- The other way to select date and time is by moving the blue sliding bar.
- Click <OK> to start the playback, or click <Close> to abort.

- The other option <Download (.DRV)> in <Select> field enables users to download the video segment of selected date and time to the PC. The selection of time duration is the same as described above. Files downloaded will be in *.drv format.

5.3.3.2 Playback Local *.drv Files

The <Local Playback> tab allows users to playback *.drv video files stored in the PC's hard drive.

Follow below steps to playback a downloaded *.drv file with the remote monitoring software.

- Click <Open> and the file selection screen is displayed.
- Select the *.drv video file for playback and click <OK>.
- Click <OK> in the <Local Playback> Screen to start the playback, or click <Cancel> to abort.
- View the video playback using the Playback controls.
- To end the playback, click <Live> to return to live video.

5.3.3.3 Playback Controls

When the local or remote video is being played, the remote monitoring software is in Playback Mode. The playback controls toolbar will emerge on the main window toolbar. The Playback controls and indicators are described as below.

Icon	Name	Description
◄◄	**Fast Backward / Step Backward**	1. Click to play the recorded video in backward direction. Click repeatedly to select the backward playback speed: 1×, 2×, 4×, 8×, 16×, or 32×. 2. When playback is paused, click repeatedly to move backward step-by-step.
► / ▌▌	**Play / Pause**	1. While playing, click to pause the playback. 2. When paused, click to resume the playback.
►►	**Fast Forward / Step Forward**	1. Click to play the recorded video in forward direction. Click repeatedly to select the forward playback speed: 1×, 2×, 4×, 8×, 16×,

		or 32×. 2. When playback is paused, click repeatedly to move forward step-by-step.

5.3.4 Verify Digital Signature

The digital signature aims to authenticate a video file exported from the unit. Follow the description to verify the digital signature.

- Click <Play> on the main window toolbar.
- Click <Verify> tab to display the Verify window.
- Click <Browse> to select the *.gpg, *.avi, *.sig files respectively, which belong to the exported video to be authenticated.
- Click <Verify> to start verifying digital signature.
- The result of verify shows in the <Status Log> field. It returns a GOOD or BAD signature result. A GOOD signature indicates the exported clip has not been altered.

5.3.5 Search from Event List

Click SEARCH, the Event List appears. The List contains information about the alarm events that the unit recorded and saved. Up to 1024 events can be listed in the Event List.

The Event List displays each event by its number, the date and time of the event, the type of the event (including Alarm In, Motion Detection, Video Loss, and Over Speed), and the camera channel where the event occurred.

To view an event video, follow these steps:

- Click SEARCH button positioned in the main window toolbar. The Event List appears.
- Scroll through the Event List and highlight the interested events.
- Double-click on the desired event to view the event video.

5.3.6 Take a Snapshot

Snapshot is a simple screen capture tool. When users click on the SNAPSHOT button, it will capture the screenshot of the window that is currently showing on the screen. Each click captures one screenshot to be saved as a JPEG file on the desktop. The snapshot file will be named as "Snapshot-*".

5.3.7 Health Status

This function verifies the HDD status of the DVR. The information items in the status chart are described as below.

Device Name
This item shows the model name of the HDD.

Int./Ext.
This item indicates whether the HDD is an internal or external device.

Total Size
This item indicates the total size of the HDD.

State
This item indicates whether the HDD is active or non-active.

Temperature
This information item is currently not available.

5.3.8 Normal and Dual Streaming

For different networks with different bandwidths, two streaming options are provided – normal or dual streaming. The preset is normal streaming.

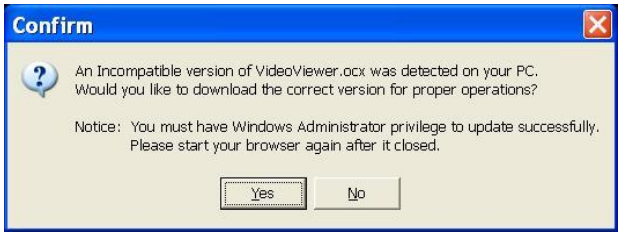
Users who are using high-speed networks, normal streaming will be a recommended choice. Depending on the HDD capacity and network usage, set the remote monitoring software to occupy high or low bandwidths.

For networks with limited bandwidth, dual streaming will be a better choice. It enables coexistence of high quality streaming at local DVR site and lower quality streaming but faster transmission for the remote monitoring site. To select dual streaming, click on the bandwidth icon and the icon will change color. Then users can furthermore choose different bit rates to adjust for the best displaying quality.

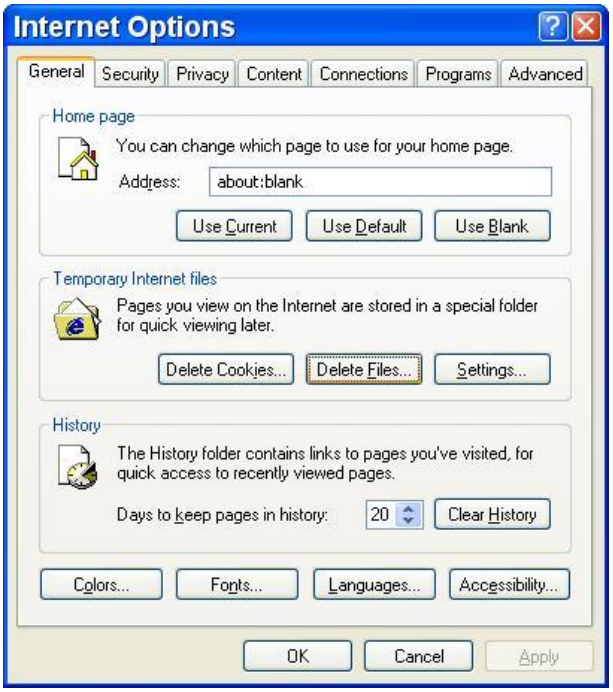
NOTE: Dual streaming will only be available when the total PPS is set to one-half of the max PPS, for example, set 30PPS for D1 recording. The reserved half of the max PPS will be handling the low rate streaming for transmission to the remote monitoring site.

5.3.9 Remote Monitoring Software Trouble Shooting Guide

What happened if the server requests to upgrade the software every time the DVR is connected? If the following screen displays repeatedly, please follow the steps to delete the temporary internet files.


Confirm
An Incompatible version of VideoViewer.ocx was detected on your PC.
Would you like to download the correct version for proper operations?
Notice: You must have Windows Administrator privilege to update successfully.
Please start your browser again after it closed.
Yes
No

- Select <Tools> from the main menu of the web browser, then <Internet Options>, and then click the <General> tab.



- Click the <Delete Files> button in the <Temporary Internet Files> field; the <Delete Files> screen displays as below.

Delete Files
Delete all files in the Temporary Internet Files
You can also delete all your offline content stored locally.
Delete all offline content
OK
Cancel

- Check the <Delete all offline content> box and click <OK>.
- Now, enter the IP address of the DVR to make the connection again.

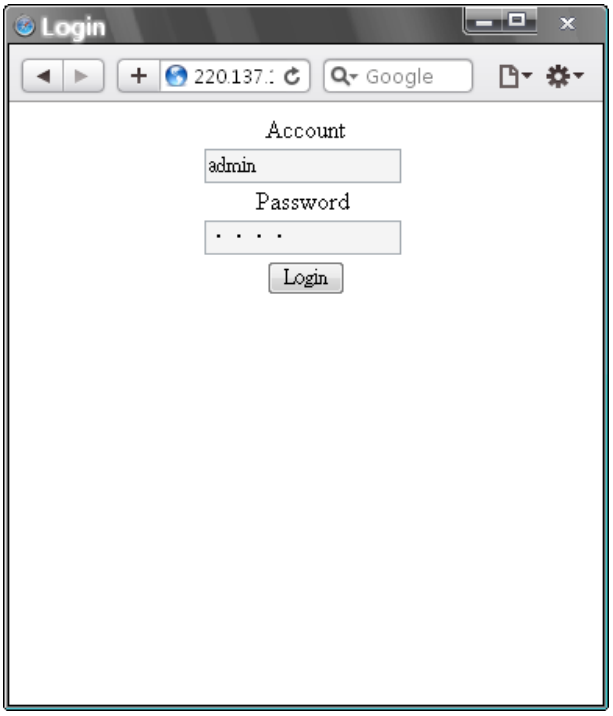
6. iPhone and Smart Phone Monitoring

The DVR also supports iPhone and smart phone monitoring. With the Safari browser on iPhone and any JavaScript-based browsers (Firefox, Opera, or Chrome) on smart phones, users can connect to the DVR via internet to check out the live video of any selected single channel of the DVR at anytime anywhere.

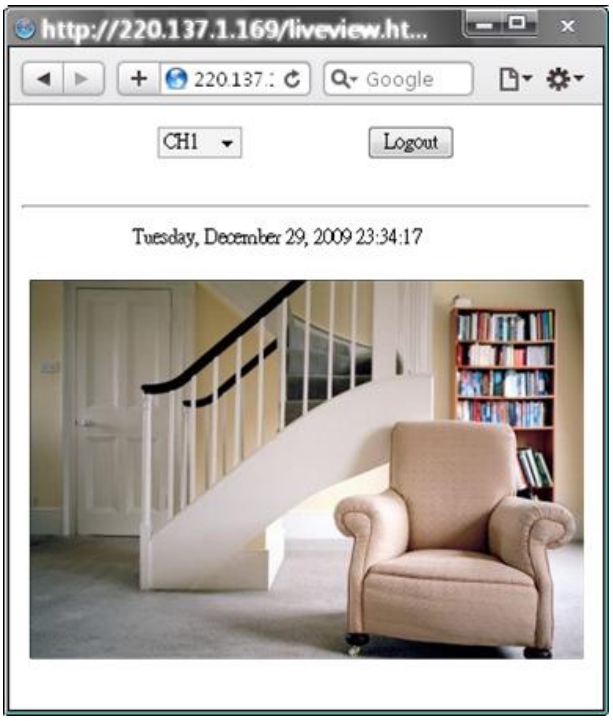
The live video will be MJPEG format with 1PPS per channel for all types of recording resolution. However, the total PPS of the DVR has to be set to offer dual streaming. Refer to further information about dual streaming in section **Normal and Dual Streaming**.

The following is an example of steps to monitoring the live video of the DVR via the Safari browser. The same steps apply to all other JavaScript-based browsers.

- After connected to the internet, startup the Safari browser and type in the IP address of the DVR. The following window will be displayed. Input a valid account name and password to login.



- When the DVR is successfully connected, the live video of channel 1 will be displayed, as shown below.



- Click on the pull-down menu and change to any other desired channel to view the corresponding live video.

- Always remember to logout to make sure that next person can successfully login.

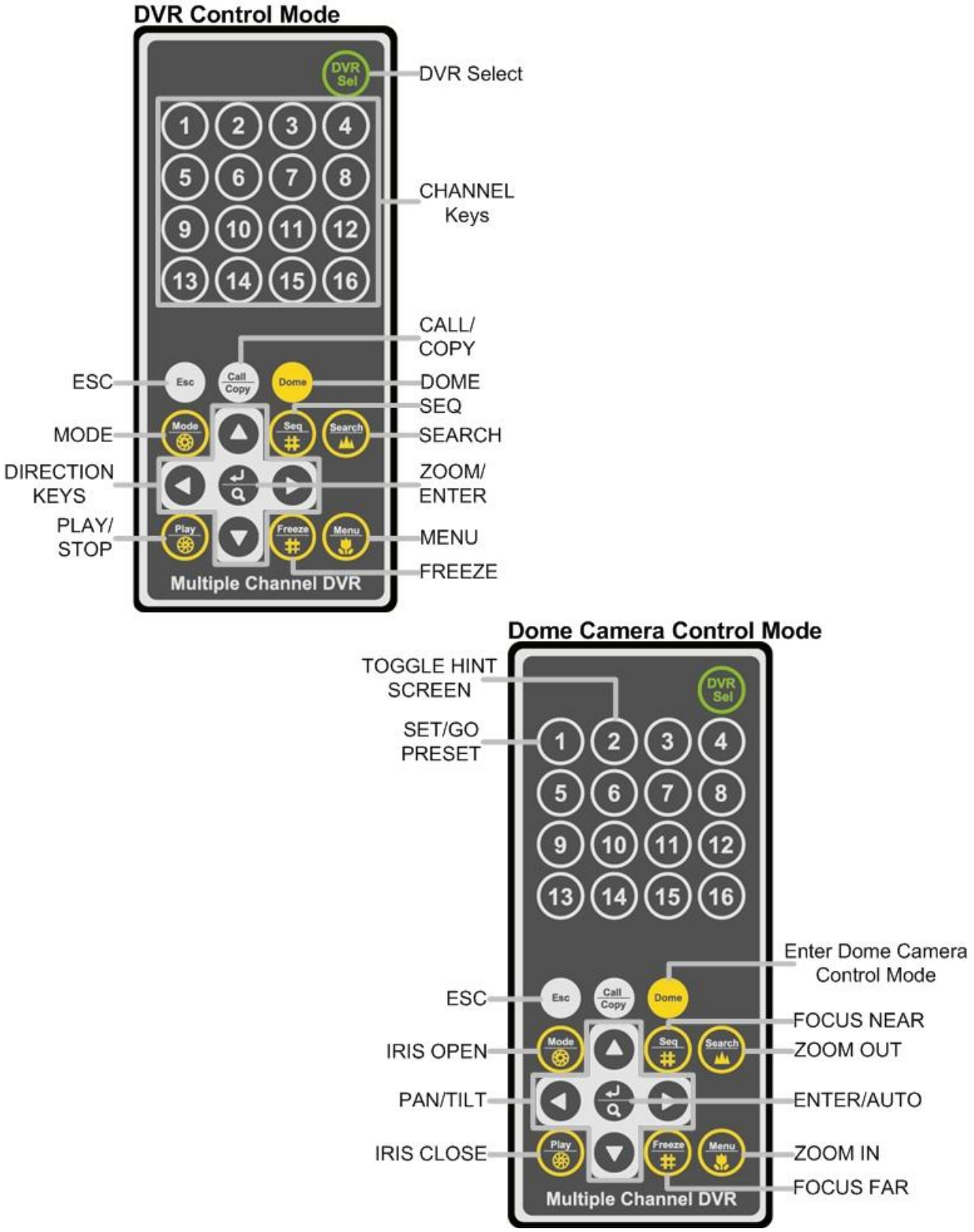
Appendix A: Recommended HDDs

Refer to the following list for some recommended HDDs to be used in the DVR.

Brand	Model Name	Model Number	Size
Seagate	Pipeline HD.2	ST3500312CS	500G
	Barracuda ES.2	ST3500320NS	500G
	Barracuda 7200.11	ST3500320AS	500G
	Barracuda 7200.12	ST3500418AS	500G
	Barracuda 7200.11	ST3750330AS	750G
	Barracuda 7200.12	ST3750528AS	750G
	Barracuda 7200.11	ST31000340AS	1000G
	Barracuda 7200.12	ST31000528AS	1000G
	Barracuda 7200.11	ST31500341AS	1500G
HITACHI	DeskStar	HDP725032GLA360	320G
	DeskStar	HDP725050GLA360	500G
	CinemaStar	HCP725050GLA380	500G
	CinemaStar	HCS721010KLA330	1000G
Maxtor	DiamondMax 22	STM3500320AS	500G

Appendix B: Remote Controller

The operational function keys on the remote control are listed as below figure:



The keys of the remote control function as the keys of the front panel of the DVR. The only difference between the remote control and the front panel keys is the "DVR SEL" key. The DVR Selection key is used to switch control between each DVR.

The remote control can be used to control up to 16 DVRs. To setup the remote control, the first thing is to assign a unique DVR Unit ID to each DVR.

Use the front panel of the DVR, and follow this path to change the DVR Unit ID, <Main Menu> → <System Setup> → <RS485 Setup> → <Unit ID>. Change the DVR Unit ID to any number between 224 and 239, and exit the menu.

The ID Table is listed below for reference.

DVR Unit ID	224	225	226	227	228	229	230	231
Remote Control #	1	2	3	4	5	6	7	8

DVR Unit ID	232	233	234	235	236	237	238	239
Remote Control #	9	10	11	12	13	14	15	16

After the DVR Unit ID is changed, setup the "DVR SEL" of the remote control. Press "DVR SEL", and then press the Remote Control # immediately to select the DVR. For example, assuming the DVR Unit ID is set to 225, press "DVR SEL" and then press "2" immediately. Now, the remote control will only be able to control the specified DVR. Press "DVR SEL", and then press the Remote control # to switch between DVRs.

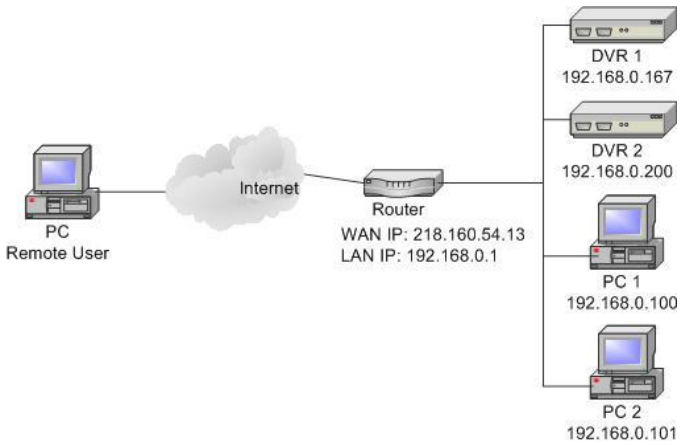
To exit the single DVR Control mode, press "DVR SEL", and then press "ESC" to do so.

Appendix C: Setting up a DVR behind a Router

This appendix describes how to set up a router if the DVR connects to the internet via a router.

To properly operate a web server, e.g. a DVR, users have to set up both the IP and port of the DVR, which are essential for data and command transmission. The port setting is adjustable in OSD setup menu of the DVR and only one port is needed to do remote operation. Typically and by the default, the DVR operates on port 80, which is well known as the http port. Please make sure that port 80 is not blocked by the ISP. Otherwise, a different available port shall be reset and the setting of the DVR shall be changed.

In case a router or sometimes a DSL modem is in place, the real IP is now assigned to the router instead of the DVR. The DVR is located behind the wall (router) and operates on virtual IP. In most cases, virtual IP starts with 192.168.x.x. The router has two IP: one is real IP (WAN IP); the other is virtual IP (LAN IP). The virtual IP would be 192.168.x.1. When the remote users want to operate the DVR, they will have to send command to the real IP, i.e. the router. Then the router has to map (forward) the command to the DVR. Thus, it is required to set up the router for port mapping (forwarding) before images from the DVR can be remotely viewed on a PC.

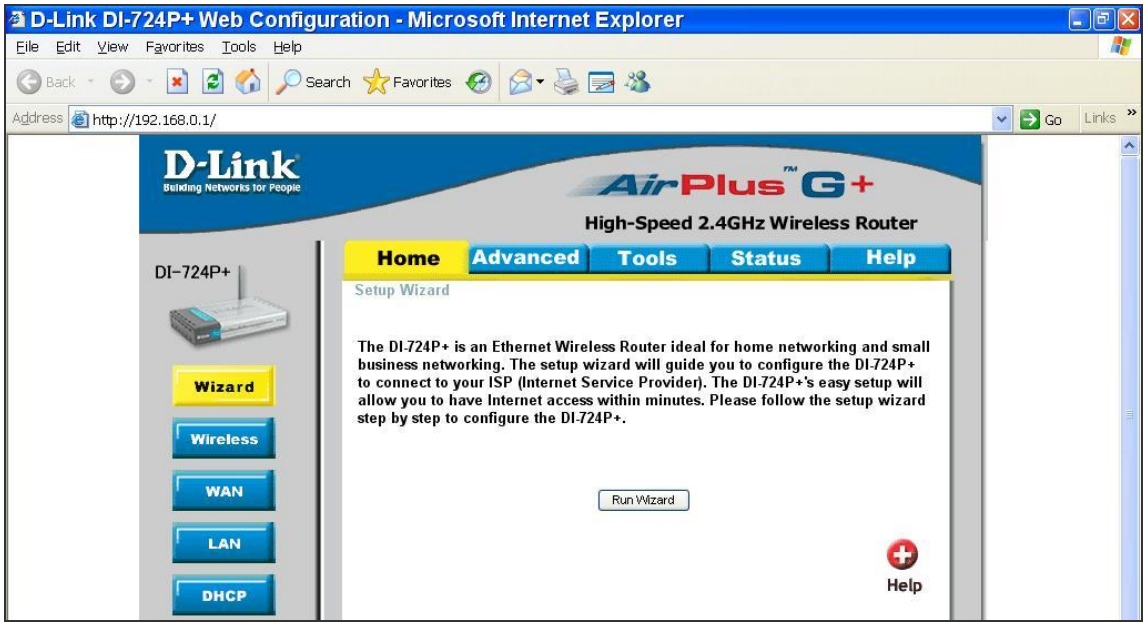


See the router manufacturer's websites for more instructions on port mapping.

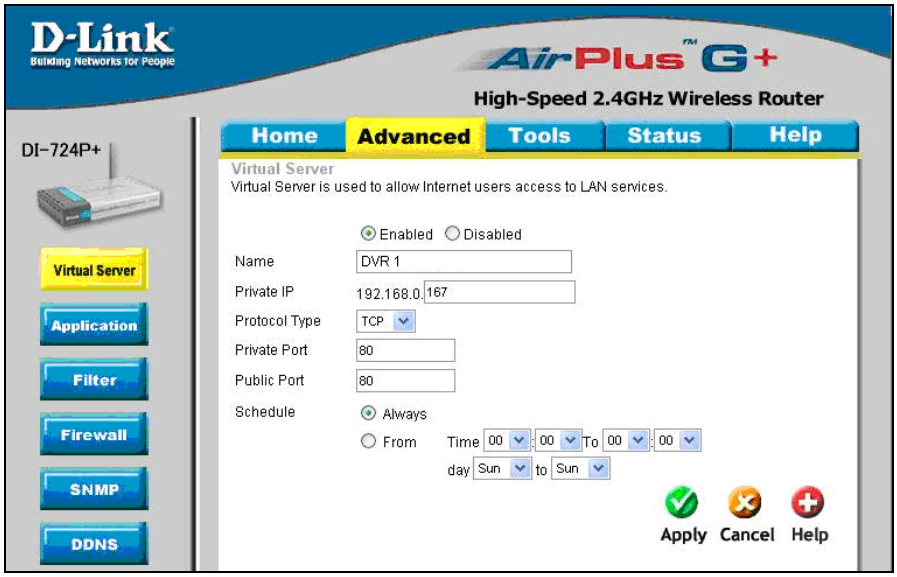
Following is an example of how the router should be set.

Router	PC	DVR 1	DVR 2
(D-Link DI-724P+) WAN IP: 218.160.54.13 LAN IP: 192.168.0.1	IP: 192.168.0.100	IP: 192.168.0.167 Trigger port: 80	IP: 192.168.0.200 Trigger port: 81

- To change the setting of the router, a PC with web browser is required.
- Connect to D-Link DI-724P+ from PC via IE. The setup screen will be shown after entering the correct username and password.


D-Link DI-724P+ Web Configuration - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.0.1/
D-Link
Building Networks for People
AirPlus G+
High-Speed 2.4GHz Wireless Router
DI-724P+
Home
Advanced
Tools
Status
Help
Setup Wizard
The DI-724P+ is an Ethernet Wireless Router ideal for home networking and small business networking. The setup wizard will guide you to configure the DI-724P+ to connect to your ISP (Internet Service Provider). The DI-724P+'s easy setup will allow you to have Internet access within minutes. Please follow the setup wizard step by step to configure the DI-724P+.
Run Wizard
Wizard
Wireless
WAN
LAN
DHCP
Help

- Click the <Advanced> tab and follow the steps to set up web port forward to DVR 1.



A. Select <Enabled> to set up the service.
B. Enter the name of the setting in the Name field: DVR 1.
C. Enter Private IP: 167
D. Choose <TCP> as the Protocol Type.
E. Enter Private Port: 80.
F. Enter Public Port: 80.
G. Click <Always> for the Schedule setting.
H. Click <Apply>.

- Click <Continue> to go on when the following screen displays.

- Follow the steps to set up web port forward to DVR 2.
  A. Click <Enabled> to set up the service.
  B. Enter the name of the setting in the Name field: DVR 2.
  C. Enter Private IP: 200
  D. Choose <TCP> as the Protocol Type.
  E. Enter Private Port: 81.
  F. Enter Public Port: 81.
  G. Click <Always> for the Schedule setting.
  H. Click <Apply>.

- Now DVR 1 can be connected via http://218.160.54.13:80 and DVR 2 can be connected via http://218.160.54.13:81.

- If there are more than one DVR behind the router, repeat the steps for port mapping setting.